

AMENDMENTS TO THE SPECIFICATION WITH MARKINGS TO SHOW CHANGES MADE

Change the title to read --DEVICE FOR NON-CONTACT CONVEYING, HANDLING AND STORING OF STRUCTURAL ELEMENTS AND MATERIALS --.

Before paragraph [0001], add the heading --BACKGROUND OF THE INVENTION--.

Before paragraph [0011], add the heading --SUMMARY OF THE INVENTION--.

Amend the following paragraphs:

[0012] -- ~~This~~ According to one aspect of the invention, this object is gained by a device defined in claim 1 and by a method defined in claim 17 for levitating an object by sound waves, wherein the object comprises at least one surface portion suited for levitation and arranged opposite to a sound-emitting surface, wherein the device comprises the following features: a rigid support structure having a top surface for absorbing forces generated by the gravitation or acceleration of the levitating object and perpendicularly acting on said top surface, a thin oscillatory element arranged in parallel to the top surface of support structure, vibration generating means for causing the thin oscillatory element to vibrate so that it is levitating above said top surface without contacting it and the object is levitating above the thin oscillatory element.--.

[0016] -- According to ~~claim 2~~ another feature of the invention, the thin oscillatory element is a sheet made of metal or a plate made of plastic which has vibration characteristics similar to those of the metal sheet. The vibration device is a generator for generating mechanic vibrations, which are transmitted to the metal sheet or the plastic plate.--.

[0017] --According to ~~claim 3~~ another feature of the invention, the thin oscillatory element is a piezoelectric film excited electrically. Experts in this field

certainly know such films, which utilize the inverse piezoelectric effect to generate mechanic thickness vibrations so that an inventive activity for selecting a piezoelectric film suited for the technological application to be realized is not required. Films of such kind are advantageous in that a wide range of vibration frequencies can be set electrically.--.

[0018] -- According to ~~claim~~ 4 another feature of the invention, the thin oscillatory element is a magnetostrictive-excited film. Generation of elastic deformations of magnetostrictive materials in a magnetic field is also well known. With this application, the electromagnets are preferably integrated in the support structure made of a non-magnetic material.--.

[0019] --According to ~~claim~~ 5 another feature of the invention, the thin oscillatory element is an electrostrictive-excited film, wherein the material comprises electrostrictive properties, and a device for electrostrictive excitation is provided.--.

[0020] --According to ~~claim~~ 6 another feature of the invention, vibrations are transferred by a mechanically fastened coupling device. This is especially advantageous in that several thin oscillatory elements can simultaneously be excited by a single device.--.

[0021] According to ~~claim~~ 7 another feature of the invention, coupling of vibrations is performed not directly but via an intermediate medium.--.

[0022] According to ~~claim~~ 8 another feature of the invention, the intermediate medium is a gas which causes the thin oscillatory element to vibrate when flowing over peripheral portions thereof.--.

[0023] According to ~~claim 9~~ another feature of the invention, the intermediate medium is a liquid which causes the thin oscillatory element to vibrate when flowing over peripheral portions thereof.--.

[0024] According to ~~claim 10~~ another feature of the invention, the thin oscillatory element is driven so that it vibrates with different frequencies and/or amplitudes. By this measure, it is possible to increase the amplitudes, for example, which cause an object rectilinearly moved along a conveying track to change its moving direction.--.

[0025] According to ~~claim 14~~ another feature of the invention, several thin oscillatory elements are arranged and can be driven selectively. In case that these elements are arranged along the conveying track on the same plane and are driven differently, a change of moving direction can also be forced so that a switching function is gained.--.

[0026] --According to ~~claim 12~~ another feature of the invention, the top surface of support structure is provided with at least one suction orifice through which air or gas is sucked. Also, the thin oscillatory element is provided with at least one orifice which, however, is not in line with the suction orifice. When a negative pressure is generated at the suction orifice, the thin oscillatory element is pressed to the top surface of support structure by the atmospheric pressure. Thereby, the bendable thin oscillatory element adapts to the contour of top surface and is stabilized locally. Also, with this embodiment, the vibrational movement of the thin oscillatory element prevents it from contacting the top surface of support structure so that it levitates in parallel to that surface. As the thin oscillatory element is provided with at least one orifice, the device of this embodiment is suited to be used as gripping device which allows a flat structural element to be gripped from above, that is to be sucked.--.

[0028] --According to ~~claim 13~~ another feature of the invention, a device for conveying using the devices according to claims 1 to 12 is claimed, wherein conveying is understood as moving of objects on a horizontally or slightly inclined track from a position A to a position B.--.

[0029] --According to ~~claim 14~~ another feature of the invention, a device for gripping using the devices according to ~~claims 1 to 12~~ the invention is claimed, wherein gripping is understood as taking-up, conveying and taking-off of structural elements. For example, such a device can be integrated in a multiple-joint robot.--.

[0030] --According to ~~claim 15~~ another feature of the invention, a storing and holding device using the devices according to ~~claims 1 to 12~~ the invention is claimed. For example, such a device allows parts to be stored intermediately in a non-contact way until the next working step.--.

[0031] --According to ~~claim 16~~ another feature of the invention, a bearing using the devices according to ~~claims 1 to 12~~ the invention is claimed, in which a shaft performs a non-contact rotation movement. The support structure of this device is formed by a tube. The thin oscillatory element is arranged at the inside wall of the tube without contacting it.--.

[0032] --According to ~~claim 17~~ another aspect of the invention, a method for levitating an object is claimed, wherein the object comprises at least one surface portion suited for levitation and positioned opposite to a surface which emits sound waves, and wherein the method comprises the following steps:

- providing of a rigid support structure having a top surface for absorbing forces generated by the gravitation or acceleration of the levitating object and perpendicularly acting on the top surface,
- providing of a thin oscillatory element [(4)] arranged in parallel to the top surface [(3)] of support structure,

- providing of vibration generating means [(5)] which cause the thin oscillatory element [(4)] to vibrate so that it is levitating above the top surface of support structure without contacting it and the object is levitating above the thin oscillatory element without contacting it.

Before paragraph **[0033]**, add the heading --BRIEF DESCRIPTION OF THE DRAWING--.

Amend paragraph **[0039]** as follows:

[0039] -- Figs. 6a, 6b shows a side view and a top view, respectively, of a sixth embodiment of the invention.--.

Before paragraph **[0041]**, add the heading --DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS--.

Page 11, after the heading "CLAIMS" and before the first claim add --What is claimed is:--.

Amend the Abstract as per separate sheet enclosed. A clean copy of the Abstract, as amended, is also submitted by separate sheet.